The disability assessment structured interview

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CHAPTER 1

Introduction

Work disability assessment in the Netherlands

In the Netherlands, an employer is obligated to continue to pay an employee for two years if an employee is disabled and unable to work. The employer is also responsible for reinstating the employee in his/her former work position or reintegrating that employee into another suitable work situation. An occupational physician assists the employer with medical questions regarding the employee's functional limitations and prognosis. After two years, the employee can apply for workers' compensation benefit from the Social Security Office. The benefit is based on the loss of wage-earning capacity by the employee. This is the difference between what the employee's income was before the sick leave, and what he or she is theoretically still able to earn in suitable work. The first step in this work disability assessment is an assessment of the patient's work limitations by an insurance physician. These work limitations are recorded in a standardized list – the Functional Ability List (FAL)[1]. In this list the insurance physician registers what work limitations the patient has and their extent. In the next step, a labor expert examines which jobs the employee is still able to perform despite the work limitations as assessed by the insurance physician. The labor expert is supported by a computer which matches the work limitations as listed in the FAL with a database of 7,000 occupations that describes the job demands in detail. The occupations selected by the computer are assessed by the labor expert as to their suitability for the individual employee.

The FAL is an important instrument in communicating between insurance physicians and labor experts. The FAL consists of a list of 70 different mental, physical and social items entailed in functioning on the job that are, in turn, grouped into 6 functional domains (Box 1). Each item can be rated as a nominal or ordinal variable on a two-to-ten scale. One example is the item "walking" found in the domain "dynamic movement", in which the insurance physician has to choose among four gradations (Box 2). In Addendum 1 the complete FAL can be found.

Box 1. Domains of the Functional Ability List (FAL)

I. Personal functioning (9 items)

II. Social functioning (12 items)

III. Adjusting to physical environment (10 items)

IV. Dynamic movement (24 items)

V. Static movement (11 items)

VI. Working hours (4 items)

Box 2. An example: the item "walking"

Walking

0 normal, can walk roughly one consecutive hour (a walk)

1 slightly limited, can walk for roughly 15-30 consecutive minutes (a stroll)

2 limited, can walk for roughly 5-15 consecutive minutes (to the mailbox)

3 very limited, can walk for less than 5 consecutive minutes (indoors)

Assessing work limitations

An insurance physician assesses the patient's work limitations. Several instruments for assessing functional work limitations are described[2], including functional capacity evaluations[3], self-assessment questionnaires[4;5] and assessments by physicians[6]. Each instrument has its own drawbacks. In functional capacity evaluations (standardized tests which measure actual physical performance) the sincerity of the patient's effort, the ability to perform work outside a laboratory setting, and whether the activities are considered medically safe can be questioned[7]. In self-assessment questionnaires, it is questionable whether patients are always being truthful, given the financial interest in the outcome. In physicians' assessments, reliability and validity are also questionable[8;9].

The determination of work limitations is complicated because symptoms or a diagnosis cannot simply be translated into functional limitations[10-14]. The one patient with rheumatoid arthritis, for instance, may have limitations that are quite different than the other's. Moreover, several diseases in which patients experience severe limitations have limited or no objective medical findings to back them up, for instance, chronic non-specific low back pain. Because of the medical knowledge needed to deal with these complicated aspects, in the Netherlands specialized insurance physicians assess the work limitations when workers' compensation is claimed.

Insurance physicians in the Netherlands base their assessments on certain information.

- a report from the employer in which the course of the first two years of work disability is summarized.
- medical information from the occupational physician who attended to the first two years of work disability.
- often, but not always, information from treating physicians (such as the primary care physician or specialists). This is only available if the occupational physician has requested this information (in about half of the cases). The insurance physician can always request medical information from the treating physicians if the patient agrees to this.
- every patient is seen by the insurance physician for an interview, observation and, in case of somatic complaints, a physical examination.

The decision of the insurance physician concerning work limitations is based, for the most part, on the patient interview[15;16].

The assessment interview

As part of the assessment interviews, insurance physicians use standard medical history-taking, including inquiring after symptoms, therapeutic interventions and medication. In addition, they specifically focus their attention on activity limitations and participation restrictions. For instance, the patient is asked how a normal day is spent.

Three defined interview models are described in the Netherlands[17], but the insurance physicians often use various parts of the three different models in daily practice[16]. We will give a short description of the three models:

- Methodical Assessment Interview[18]: The interview is semi-structured and has 10 topics including work possibilities, motivation, personal ideas about the pathology, vitality, personal changes, life events, thoughts about the future, medical history, work history and a description of a normal day. The arguments by the patient for the claim are important, with an emphasis placed on the functional limitations and abilities described in the claim. The patient is responsible for his own disability and recovery.
- Multi-causal Analysis[19]: This is an interview with a limited structure that includes five broad fields which can be interchanged. These fields include medical history and complaints, functioning, personal characteristics, work factors and personal factors. The physician engages the patient in the interview, and has an attitude of involvement, respect and attention. Perception and understanding of the patient are important.
- Disability Assessment Structured Interview (DASI)[20]: This is a semi-structured interview protocol with fixed topics which are largely based on the International Classification of Functioning Disability and Health (ICF)[21] (Addendum 2). The main topics are: introduction, work, impairments, the limitations to activity that are experienced, participation, the patient's opinion, and the physician's opinion. Each topic is subdivided into other topics. Concrete and detailed examples play important roles in defining the patient's limitations and abilities.

Reliability and validity

The assessment of functional limitations has major consequences. Therefore, it is imperative that different insurance physicians come to the same assessment (reliability), and that the proper functional limitations are assessed (validity). However, as far as the assessment of functional limitations by physicians in the Netherlands is concerned, no literature on reliability and validity can be found[17].

Reliability is the extent to which a test is able to measure in a consistent way, free from error. This

consistency may be either over time or between raters. There are several types of reliability including intra-rater reliability and inter-rater reliability. Intra-rater reliability examines the stability of data recorded by one person across two or more testing occurrences. Inter-rater reliability determines the variation between two or more raters who are assessing the same occurrence of the test[22;23].
Validity is the extent to which an instrument measures what it is intended to measure. There are several forms of validity including content, criterion (concurrent and predictive), and construct validity. Content validity is the degree to which test items represent the domain the test is intended to measure. This is usually determined by a panel of experts. Criterion validity is the extent to which the test performance is related to some other measure. It is comprised of concurrent and predictive validity. Concurrent validity examines the correlation between two or more measures given to the same subjects at the same time. Predictive validity compares a subject's performance on a test to performance at a future criterion. Construct validity is the extent to which a test can be shown to measure a hypothetical construct[23;24].

Aim of this thesis

The interview by the insurance physician plays an important role in the assessment of work disability, yet no studies into the reliability and validity of the interview have been conducted. The aim of this thesis is to study the psychometric qualities (reliability and validity) of the DASI method as part of work disability assessment in the Netherlands. Of the three interview models, we chose the DASI because it has detailed instructions (Addendum 2), and also because the author of this thesis is the developer of the DASI and is experienced in training insurance physicians in the DASI method. First, we wanted to describe a model that could identify sources of differences among physicians in their assessments of functional limitations, and then go on to systematically research the literature for instruments to assess functional limitations in workers' compensation claimants. This has resulted in the following research questions:

1. What are the possible sources of variation in work disability assessment?
2. Which instruments are described that measure or assess functional limitations in claimants, and what are their psychometric qualities?
3. What effect does detailed information on functioning in addition to medical history-taking have upon the functional limitations assessed and on inter-rater reliability?
4. In their own opinion, are physicians able to assess functional limitations based on a written DASI report?
5. What are the characteristics of the DASI in daily practice?
6. What is the patient satisfaction evaluation for physicians who conduct a DASI interview?
7. What comments on the DASI do insurance physicians have?
8. What is the opinion about using the DASI that insurance have?

9. What is the intra- and inter-rater reliability of functional limitations assessments using the DASI?
10. What is the content and concurrent validity of functional limitation assessments using the DASI?

Outline of this thesis

In **Chapter 2**, a model is presented in which the process of disability assessment, the instruments used and the role of the assessor is addressed. On the basis of this model, the causes of inter-rater variability and suggestions for improvement are discussed.

In **Chapter 3**, a systematic review of the literature is presented, which comprises studies on instruments for assessing functional limitations in workers' compensation claimants, and their psychometric properties.

In **Chapter 4**, a study is described which investigated whether the provision of detailed information concerning participation and activity limitations, as compared to medical information alone, influences the assessment of work limitations by physicians. Three different groups of insurance physicians were given different kinds of information on the same patient: the first group received only medical information, the second group received detailed information on participation and activity limitations, and the third group was provided with both forms of information. Agreement percentages within the groups and differences between the groups as to scores given on the work limitation items of the Functional Ability List (FAL) were measured.

In **Chapter 5**, a study is described in which written reports of DASI interviews are used to investigate whether physicians are able to perform a disability assessment based on a written report. In addition, the inter-rater reliability among physicians was measured by computing the percentage agreement with respect to the mental and physical items of the Functional Information System (FIS) and the Mental Ability List (MAL).

In **Chapter 6**, a study is described in which video recordings of DASI interviews were used to analyze the content of DASI interviews; physicians were asked for their comments about the interviews and to determine inter- and intra-rater reliability of assessments. The interviews were analyzed by measuring the duration of the different topics of the interviews. The inter-rater reliability among the physicians was measured by computing the percentage agreement with respect to the mental and physical items of the Functional Information System (FIS) and the Mental Ability List (MAL). To measure intra-rater reliability, the insurance physicians who made the recordings were asked to fill in the FIS and MAL right after the recordings and after seeing the video again six months later.

In **Chapter 7**, a randomized controlled trial is described in which employees applying for a work-disability pension were independently interviewed and examined either by two physicians who had completed DASI training or by two physicians from a control group without any training. Agreement percentages within both groups of physicians, eligibility for a disability benefit, and differences between the groups in terms of the scores given on the work-limitation items from FAL were measured to investigate reliability and concurrent validity. To determine the content validity, the insurance physicians who completed DASI training were asked to fill out a questionnaire concerning their opinion of the DASI. Additionally, patients filled out a questionnaire to measure their satisfaction as to the behavioral aspects of the physicians.

In **Chapter 8**, the main findings of the studies are presented and discussed.

In **the Addendum** an extensive description of the FAL and the DASI can be found.

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